

## CLAIMS:

1. A low-pressure gas discharge lamp that has, in a gas-discharge vessel, one or more inert gases as a buffer gas and means for producing and maintaining a low-pressure gas discharge, characterized in that it contains a gallium halide or a mixture of a plurality of gallium halides.
- 5 2. A low-pressure gas discharge lamp as claimed in claim 1, characterized in that, in addition to one or more gallium halides, it also contains indium and/or thallium.
3. A low-pressure gas discharge lamp as claimed in claims 1 and 2, characterized  
10 in that it contains the elements gallium, halogen and indium and/or thallium in the following molar proportions: the expression governing the molar proportions of Z is:  $m(Z) > 0$ , and the expression governing the molar proportions of X, Ga and Z is:  $m(X) < m(Ga) + m(Z)$ , where X stands for fluorine, chlorine, bromine and/or iodine and Z for indium and/or thallium.
- 15 4. A low-pressure gas discharge lamp as claimed in claims 1 to 3, characterized in that the total concentration of the gallium and indium/thallium halides in the gas phase in the gas-discharge vessel is  $2 \times 10^{-9}$  to  $2 \times 10^{-11}$  mol/cm<sup>3</sup>.
5. A low-pressure gas discharge lamp as claimed in claims 1 to 4, characterized  
20 in that the gas-discharge vessel is surrounded by a heat-reflecting outer envelope.
6. A low-pressure gas discharge lamp as claimed in claims 1 to 5, characterized in that the inert gas pressure in the gas-discharge vessel is between 1 and 5 mbar.
- 25 7. A low-pressure gas discharge lamp as claimed in claims 1 to 6, characterized in that the discharge is excited capacitively or inductively and by a high-frequency alternating field.

8. A low-pressure gas discharge lamp as claimed in claims 1 to 6, characterized in that the discharge can be excited by internal electrodes made of high-melting-point materials.
- 5 9. A low-pressure gas discharge lamp as claimed in claim 8, characterized in that the internal electrodes are provided with a material having a low work function.
10. A low-pressure gas discharge lamp as claimed in claims 1 to 9, characterized in that it contains a phosphor by which the proportion of UV in the radiation generated is  
10 converted into visible radiation.
11. An illumination device, characterized in that it includes one or more low-pressure gas discharge lamps as claimed in claims 1 to 10.
- 15 12. An illumination device, selected from the group of tanning devices, backlighting devices for LCD-displays, UV-disinfection devices and UV-curing devices for resins.